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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,970	01/18/2002	Bruce A. Gnade	4380.000300/KDG	1567
23720	7590	12/15/2006	EXAMINER	
WILLIAMS, MORGAN & AMERSON 10333 RICHMOND, SUITE 1100 HOUSTON, TX 77042			MAYEKAR, KISHOR	
			ART UNIT	PAPER NUMBER

1753

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,970

Applicant(s)

GNADE ET AL.

Examiner

Kishor Mayekar

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102 and § 103

1. Claims 11, 14, 16, 19, 21, 24, 26, 29, 41, 44, 46 and 49 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chalamala et al. ("Effect of CH₄ on the electron emission characteristics of active molybdenum field emitter arrays", J. Vac. Sci. Technol. B 16(6), 1998, pp. 307-376), hereinafter referred as the first Chamala publication, in light of Chalamala et al. ("Interaction of H₂O with active Spindt-Type molybdenum field emitter arrays", J. Vac. Sci. Technol. B, 17(2), pp. 303-305, 1999), hereinafter referred as the second Chalamala publication, MSDS of Molybdenum (obtained from Alfa Aesar Co., May 30, 2000) and MSDS of Methane (obtained from Airgas Inc, January 3, 2001), for reasons as of record.
2. Claims 11, 14-16, 19 and 20 stand rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chalamala et al. ("Effect of O₂ on the electron emission characteristics of active molybdenum field emission cathode arrays", J. Vac. Sci. Technol. B, 16(5), pp. 2859-2865, 1998), hereinafter referred as the third Chalamala publication, for reasons as of record.
3. Claims 12, 13, 17, 18, 22, 23, 25, 27, 28, 30-40, 42, 43, 45, 47, 48 and 51-60 stand

Art Unit: 1753

rejected under 35 U.S.C. 103(a) as being unpatentable over either the first Chalamala publication in light of the second Chalamala publication or third Chalamala publication in view of Applicant's admission, for reasons as of record.

Response to Arguments

4. Applicant's arguments filed in the appeal brief of 28 September 2005 have been fully considered but they are not persuasive.

To the argument that the Chalamala publications are not at all concerned with chemical toxins and/or biological toxins and therefore do not describe or suggest reacting, ionizing, or dissociating at least one radical species by exposure to at least one of a chemical toxin and a biological toxin and the submitted MSDS for molybdenum and methane teaches that the substances are not toxic, the examiner finds this is unpersuasive. As chemical toxins disclosed in lines 15-20 of page 2 of the specification are from chemical plants that produce ammonia, chlorine, insecticides, and the like, where there are large volumes of highly toxic materials, and from manufacturing facilities that typically use arsine, germane, diborane, and the like, where there are large volumes of highly toxic materials in place. Chemical materials as hydrocarbons like CH_4 and metal molybdenum are used or produced in chemical plants and/or manufacturing facilities, the hydrocarbons and molybdenum are fit to the Appellant's above disclosure as chemical toxins. Further the submitted MSDS for methane shows in Part 1 section 3 of page 2

Art Unit: 1753

symptoms of exposure when exposing to various concentration of methane including fatal concentration, and the submitted MSDS for molybdenum metal shows in section 8 in page 2 its limit value that requires monitoring at the workplace, and in section 11 of page 4 its subacute to chronic toxicity. As such, the above chemical materials, methane and metal molybdenum, are chemically toxics when present at a concentration. And since the Chalamala publications describe or suggest reacting, ionizing, or dissociating at least one radical species by exposure to at least one of the above chemical materials (chemical toxins), the rejection stands.

As to the argument that the pending claims are not obvious in view of the Chalamala publications and/or in view of the admitted prior art since the references do not teach or suggest all the claim limitation. Since the Chalamala publications describe or suggest reacting, ionizing, or dissociating at least one radical species by exposure to at least one of the above chemical materials (chemical toxins) and/or since the admitted prior art shows the limitation of the recited process parameter and cathode-to-gate distance in recent advances in field emission arrays, as asserted by the examiner in the last Office action, the rejection stands.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1753

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on

Art Unit: 1753

access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Kishor Mayekar". The signature is fluid and cursive, with a large initial "K" and a long, sweeping underline.

Kishor Mayekar
Primary Examiner
Art Unit 1753